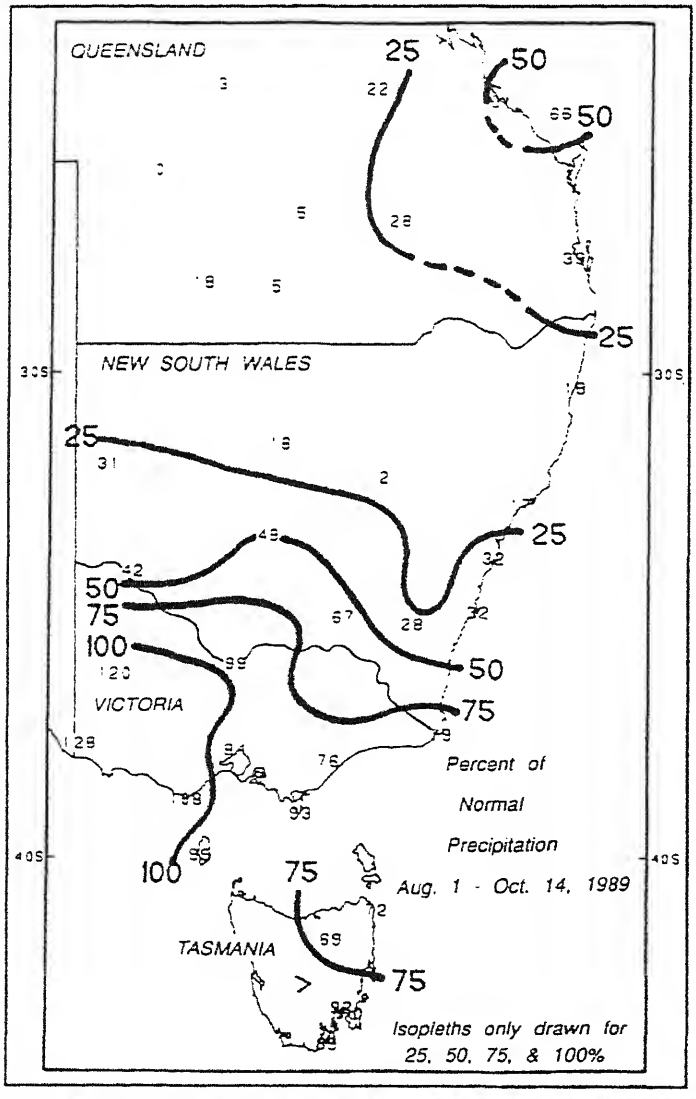
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 89/41 Washington, DC October 14, 1989



UNLIKE MUCH OF THE CONTINENT, WHERE MOST OF THE ANNUAL PRECIPITATION NORMALLY OCCURS EITHER IN THE SUMMER (DEC-FEB) OR WINTER (JUN-AUG) MONTHS, RAINFALL IN SOUTHEASTERN AUSTRALIA IS EVENLY DISTRIBUTED DURING THE YEAR. HOWEVER, EXTREMELY DRY WEATHER HAS PREVAILED ACROSS MUCH OF THIS REGION SINCE AUGUST 1 AS MANY LOCATIONS HAVE ACCUMULATED LESS THAN HALF THE NORMAL PRECIPITATION. AS A RESULT, THERE IS MUCH CONCERN OVER INADEQUATE MOISTURE FOR THE DEVELOPING WHEAT CROP IN NEW SOUTH WALES AND SOUTHERN QUEENSLAND.

UNITED STATES DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- U.S. cooling degree days (summer) or heating degree days (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every three months).
- Global three-month temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Climate Analysis Center via the Global Telecommunications System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF OCTOBER 14, 1989

Upper Great Lakes:

RAINS CONTINUE; DRYNESS SUBSIDES.

Widespread precipitation was noted for a second consecutive eek. Totals of 10 to 25 mm, while not above normal, were of ufficient quantity to significantly ease short-term dry onditions [Ended at 5 weeks].

Eastern U.S.:

HEAVY RAINS INUNDATE FLORIDA.

low-moving thunderstorms along a stalled cold front dumped s much as 229 mm on Daytona, FL (174 mm on the 10th) while ther locations in Florida received 75 mm to 163 mm. With the xception of the southern Atlantic Coast, excessive moisture eeded as below normal rains and an increase in temperatures late week increased evaporative rates [7 weeks].

France, Spain, Portugal, and Northern Italy:

MEAGER RAINFALL.

ry conditions intensified as little precipitation (less than 5 mm) ell over most locations. While cooler temperatures returned Spain and Portugal, increased rainfall is needed since less an 25 mm has fallen in recent weeks [5 weeks].

Western Africa:

EXTREME HEAT RELENTS.

verage temperatures returned to more normal levels departures of +1 to +2°C) at most locations. Only northern enegal and southern Mauritania were anomalously warm as aximum values exceeded 42°C and departures reached +3°C Ended at 3 weeks].

5. Japan:

LIMITED WETNESS LINGERS.

A continuing decline in rainfall has reduced short-term moisture supplies to more normal levels in many locations. However, moderate precipitation amounts (50 to 100 mm) prolonged wet conditions along the western coast of southern Honshu and northern Shikoku [9 weeks].

6. The Philippines, Hainan, Vietnam:

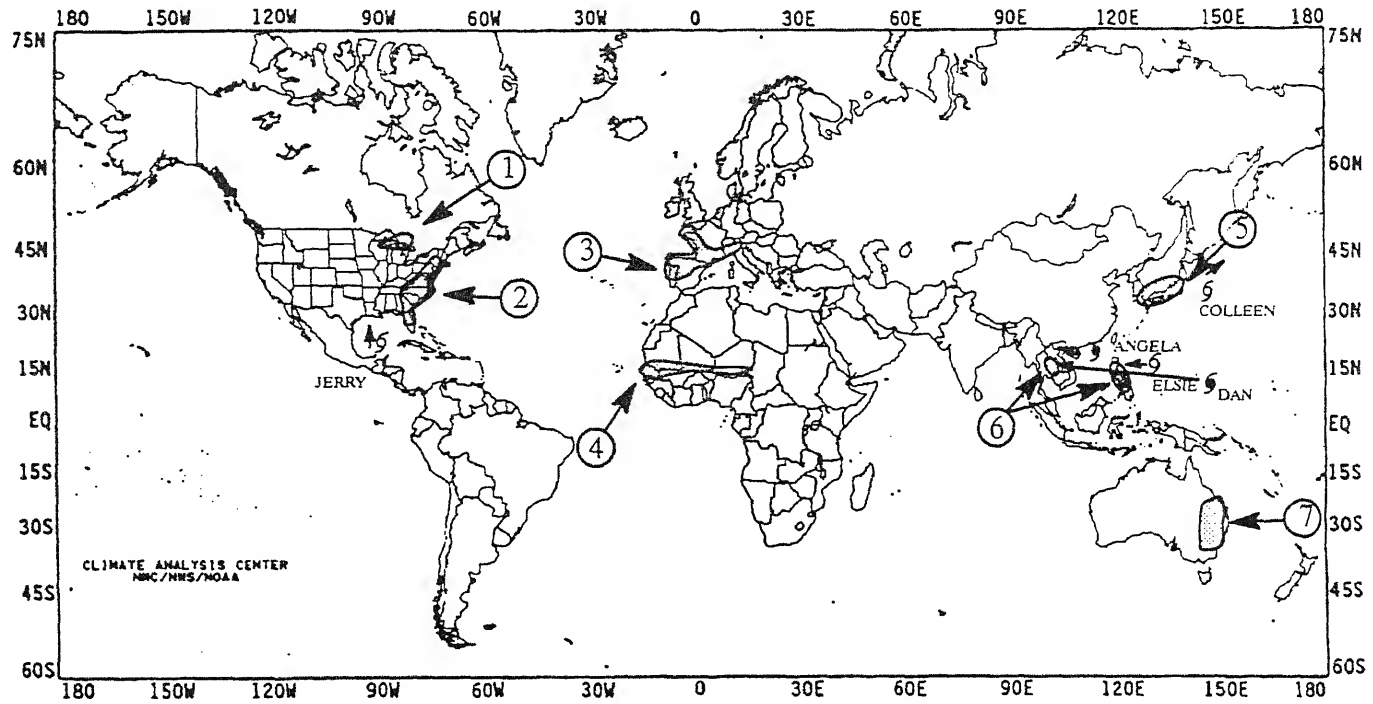
REGION LASHED BY TYPHOONS.

In the last two weeks, Typhoons Angela, Brian, and Dan have battered Southeast Asia. A state of calamity was declared in parts of the Philippines after Dan swept through with 75 knot winds. Hainan and Vietnam were buffeted by winds of as much as 110 knots from Angela. Rainfall varied from 150 to 250 mm in the Philippines and Vietnam to 487 mm in Hainan [Episodic Events].

7. Eastern Australia:

AREA REMAINS DRY.

No rainfall during the week increased moisture deficits while lowering four-week totals to less than 11% of normal [7 weeks].



UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF OCTOBER 8 THROUGH OCTOBER 14, 1989

With the exception of the extreme northwestern and southeastern corners, high pressure dominated the country last week as relatively dry weather prevailed throughout the contiguous U.S. Near-record cold air invaded the upper Midwest, Great Lakes, mid-Atlantic, and New England during the first half of the week, but temperatures rapidly moderated to above normal levels by the week's end. In the western and central U.S., a weak ridge of high pressure kept the area unseasonably warm and precipitation-free. In the southwestern Gulf of Mexico, Tropical Storm Jerry rapidly formed on Friday and was moving slowly northward towards the upper Texas coast. Early in the week, a strong high pressure center slipped southeastward out of Canada, dropping lows into the twenties and thirties in the upper Midwest, Great Lakes, and Ohio Valley. Farther south, a cold front stalled across central Florida and produced scattered showers and thunderstorms along the eastern Gulf and southern Atlantic Coasts. A weak secondary cold front moved through the nation's midsection, triggering some light showers across the Great Lakes and the north-central Appalachians. By mid-week, scattered showers persisted over Florida in association with the stationary front. Another cold front pushed southeastward out of Canada into the northern Rockies and Plains. Light showers moved into the Pacific Northwest ahead of a frontal system. During the latter half of the week, the aforementioned cold front became stationary across the northern quarter of the country. Severe weather developed to the north of the front in northern lower Michigan and western New York. Damaging winds and hail accompanied some of the thunderstorms. Across the remainder of the country, Indian summer, defined as a period in mid to late autumn of warm weather, sunny, but hazy skies and cool nights, best described the conditions. In Hawaii, heavy showers early and late in the week soaked most of the islands while precipitation diminished along Alaska's southern coast.

According to the River Forecast Centers, there were few areas in the lower 48 states where stations accumulated more than 2 inches of precipitation during the week. These areas included extreme southern Florida, coastal sections of eastern Florida and Georgia, and northwestern Washington and the northern Cascades (see Table 1). Portions of the southeastern Alaskan coast and most of the Hawaiian islands recorded moderate to heavy weekly amounts. Light to moderate amounts were observed along the Pacific Northwest Coast, in the extreme northern Rockies, the Rio Grande Valley, from the upper Midwest southeastward to the central Appalachians and northeastward to the New England Coast, and along the central and eastern Gulf and southern Atlantic Coasts. Little or no precipitation fell on most of the western half of the nation, the Tennessee and middle Mississippi Valleys, and in portions of the mid-Atlantic.

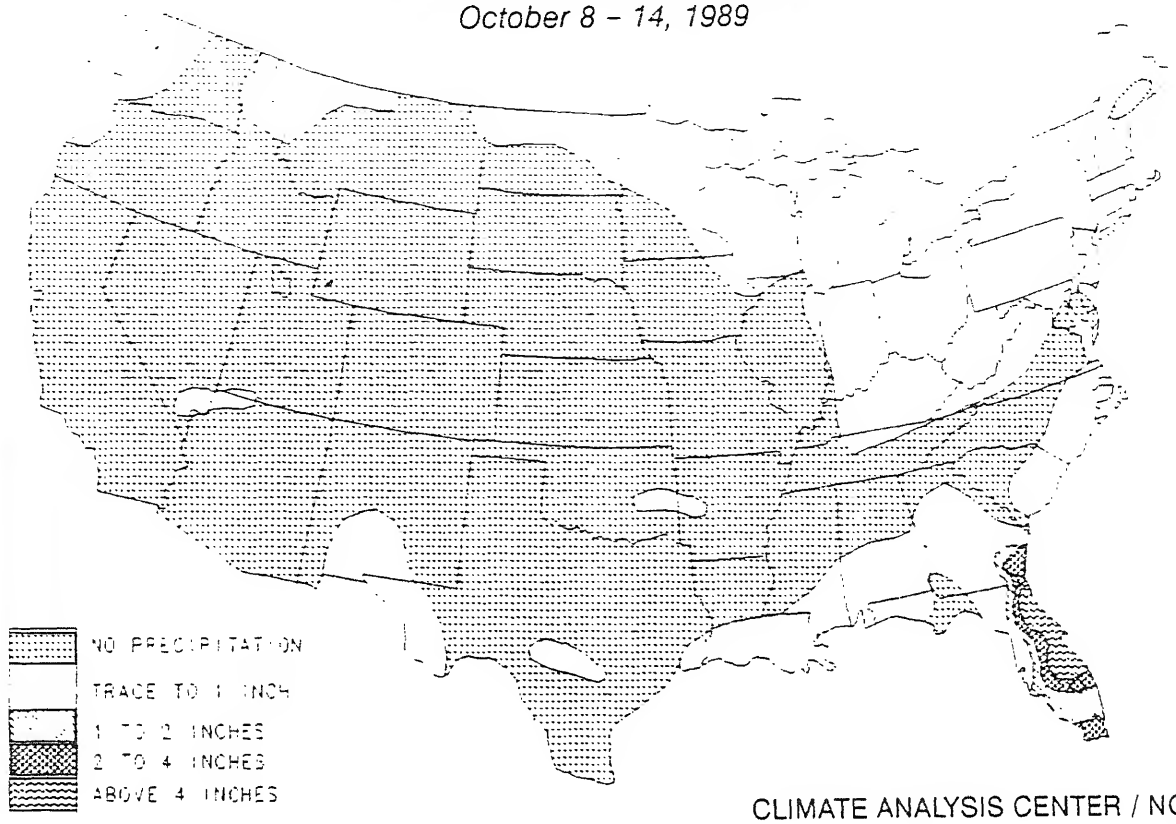
After unseasonably cold conditions covered much of the northern half of the country during the first week of October, summer-like warmth quickly returned to the western half of the U.S. Highs soared into the nineties throughout the central and southern Plains and the lower Mississippi Valley, and poked into the eighties as far north as eastern Montana, southern North Dakota, Minnesota, Wisconsin, and lower Michigan. Dozens of daily maximum temperature records were tied or broken during the week, especially in the nation's midsection. Temperatures averaged 8°F and 10°F above normal in the central Rockies and Plains and southern Arizona (see Table 2). Elsewhere, slightly warmer than normal conditions occurred in the western two-thirds of the nation, in Florida, and across most of northern and western Alaska. Even though several locations experienced record or near-record cold in the upper Midwest, Great Lakes, Ohio Valley, and the Northeast early in the week, southwesterly flow quickly brought warmer weather to the Midwest and East by the week's end. As a result, the magnitude of the subnormal weekly temperatures were greatly reduced. The greatest negative departures (between -5°F and -7°F) were located in New England and along sections of the central and northern Atlantic Coast (see Table 3). Below normal temperatures were also observed throughout the eastern third of the United States, along the southern California coast, and in south-central Alaska.

TABLE 1. Selected stations with 2.00 or more inches of precipitation for the week.

STATION	TOTAL (INCHES)	STATION	TOTAL (INCHES)
DAYTONA BEACH, FL	9.02	HONOLULU, OAHU, HI	2.51
CAPE CANAVERAL AFS, FL	6.41	ANNETTE ISLAND, AK	2.44
MELBOURNE, FL	5.27	HILO/LYMAN, HAWAII, HI	2.39
VERO BEACH, FL	3.99	KETCHIKAN, AK	2.33
KAHALUI, MAUI, HI	3.96	QUILLAYUTE, WA	2.13
HOMESTEAD AFB, FL	3.43	YAKUTAT, AK	2.09
BRUNSWICK, GA	3.05		

OBSERVED PRECIPITATION

October 8 – 14, 1989



CLIMATE ANALYSIS CENTER / NOAA

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

October 8 – 14, 1989

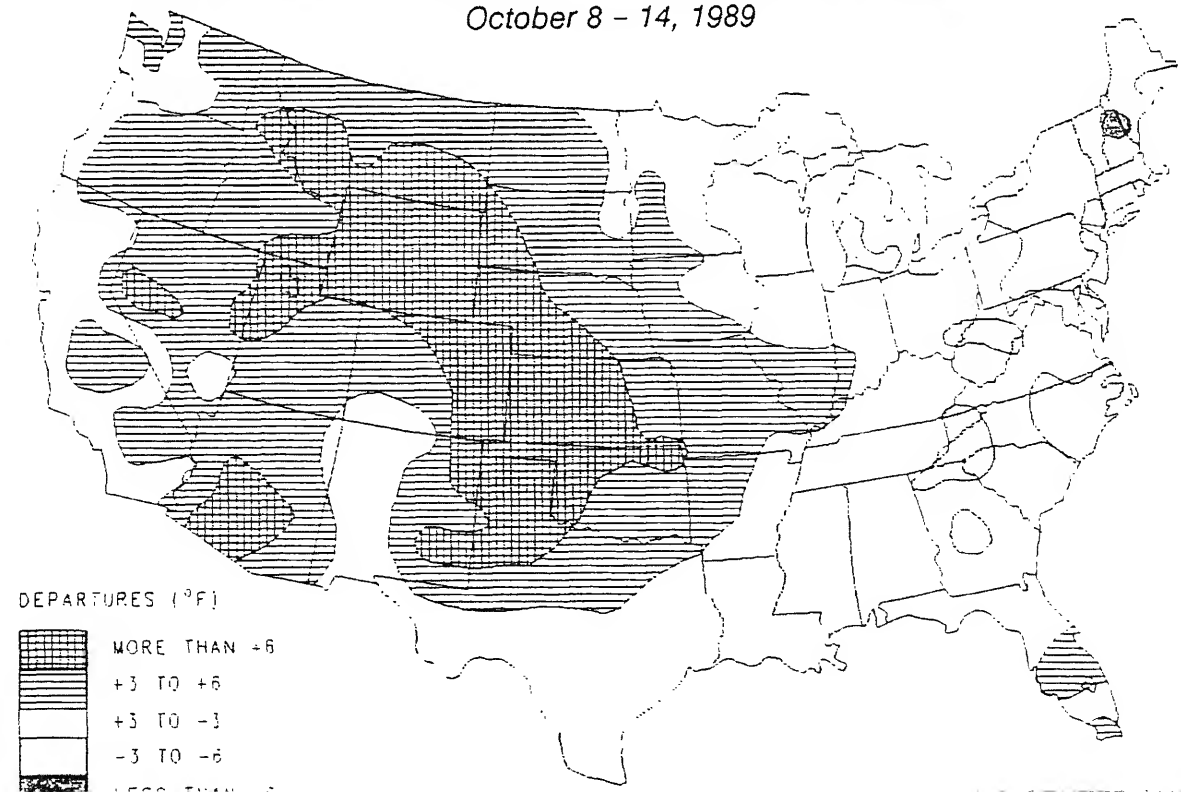
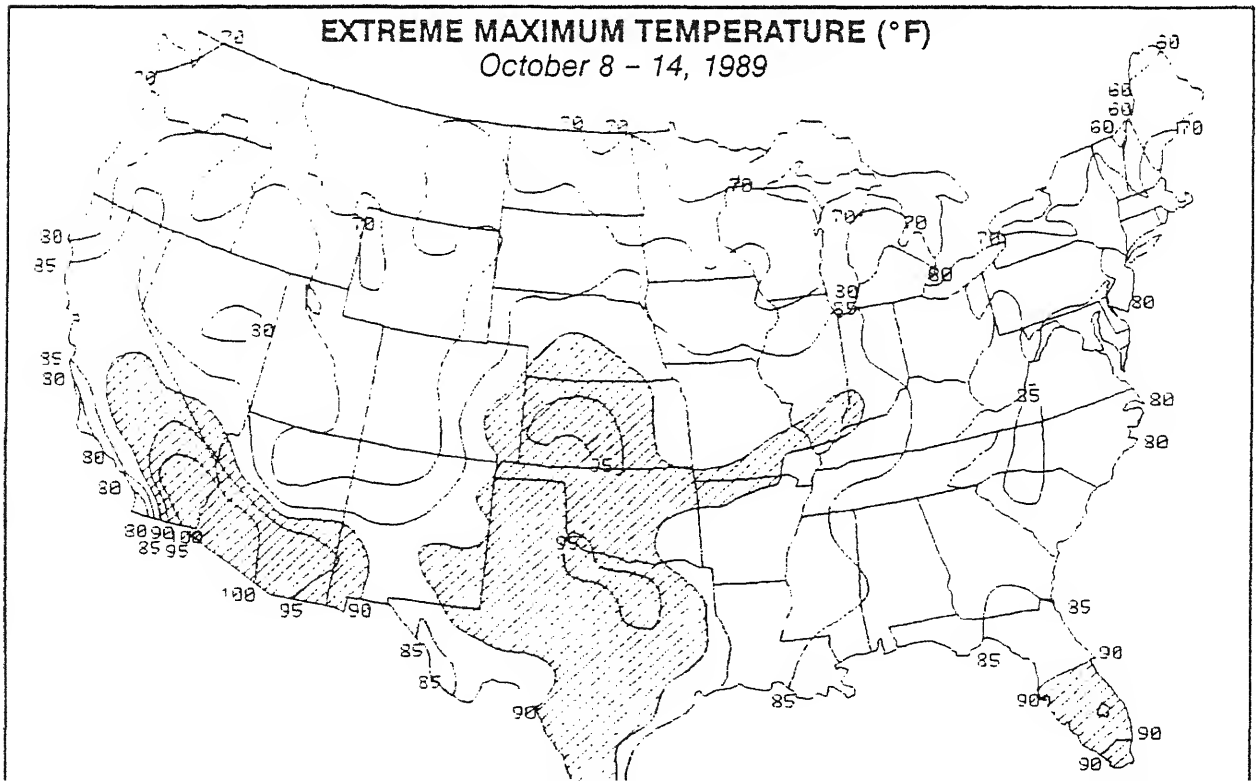


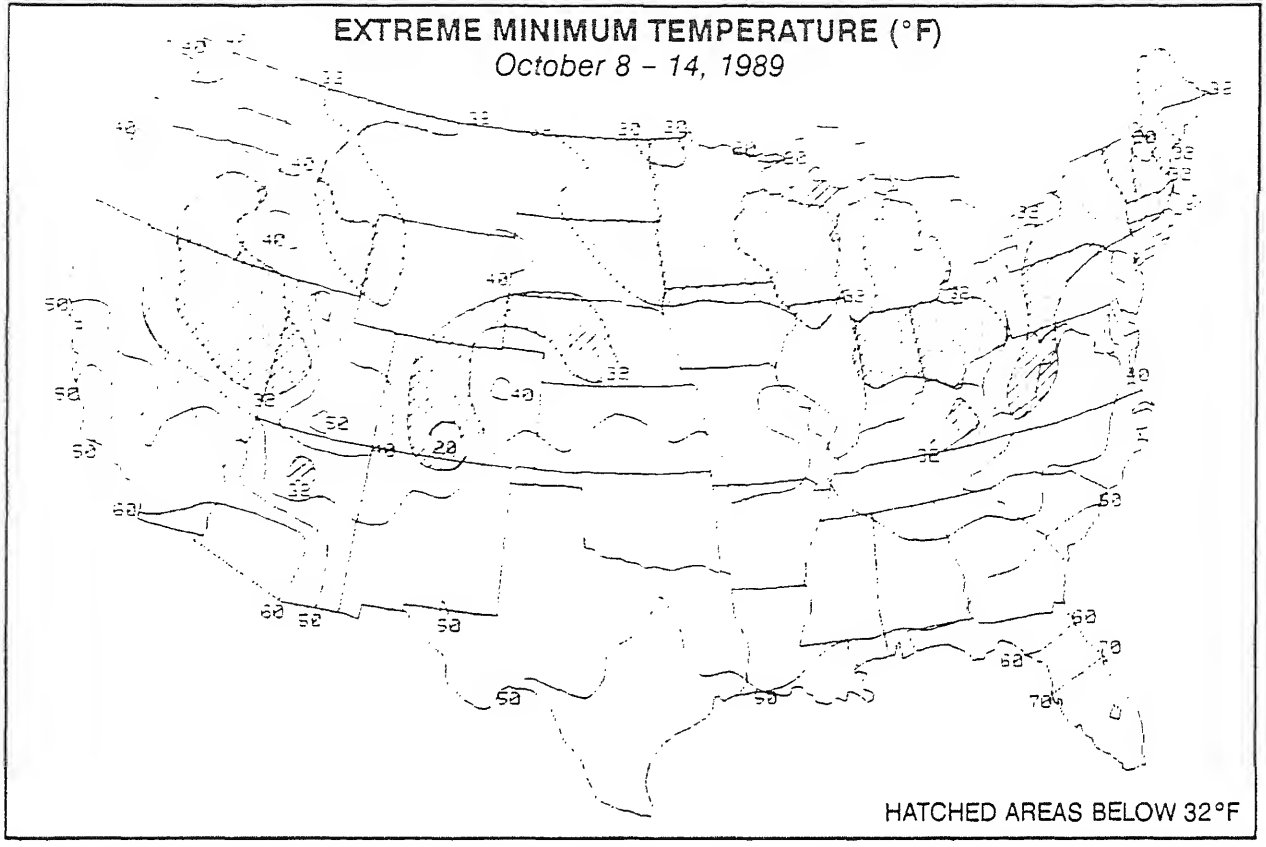
TABLE 2. Selected stations with temperatures averaging 7.0°F or more ABOVE normal for the week.

STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
CHEYENNE, WY	+10.4	60.0	VICTORVILLE/GEORGE AFB,CA	+7.7	70.8
AKRON, CO	+10.0	63.1	AMARILLO, TX	+7.6	68.8
SIDNEY, NE	+9.6	60.7	SCOTTSBLUFF, NE	+7.6	60.1
CODY, WY	+9.5	58.6	LARAMIE, WY	+7.6	52.6
PHOENIX, AZ	+9.4	84.9	GLENDALE/LUKE AFB, AZ	+7.5	80.5
LANDER, WY	+9.4	58.7	LUBBOCK, TX	+7.4	70.5
BARTER ISLAND, AK	+9.3	27.7	OGDEN/HILL AFB, UT	+7.4	61.7
DENVER, CO	+9.1	63.1	ROSWELL, NM	+7.3	69.3
GOODLAND, KS	+8.6	63.5	TUCUMCARI, NM	+7.3	68.6
BARROW, AK	+8.6	25.7	DODGE CITY, KS	+7.3	67.5
SALINA, KS	+8.5	58.9	FORT COLLINS, CO	+7.3	59.3
ROCK SPRINGS/SWEETWATER, WY	+8.1	55.2	RUSSELL, KS	+7.2	66.6
BLANDING, UT	+8.0	52.0	SHERIDAN, WY	+7.2	56.4
COLORADO SPRINGS, CO	+8.0	60.7	CONCORDIA, KS	+7.1	66.4
CASPER, WY	+8.0	57.4	HELENA, MT	+7.1	54.4
WORLAND, WY	+7.8	56.5	ST. LOUIS, MO	+7.0	67.2

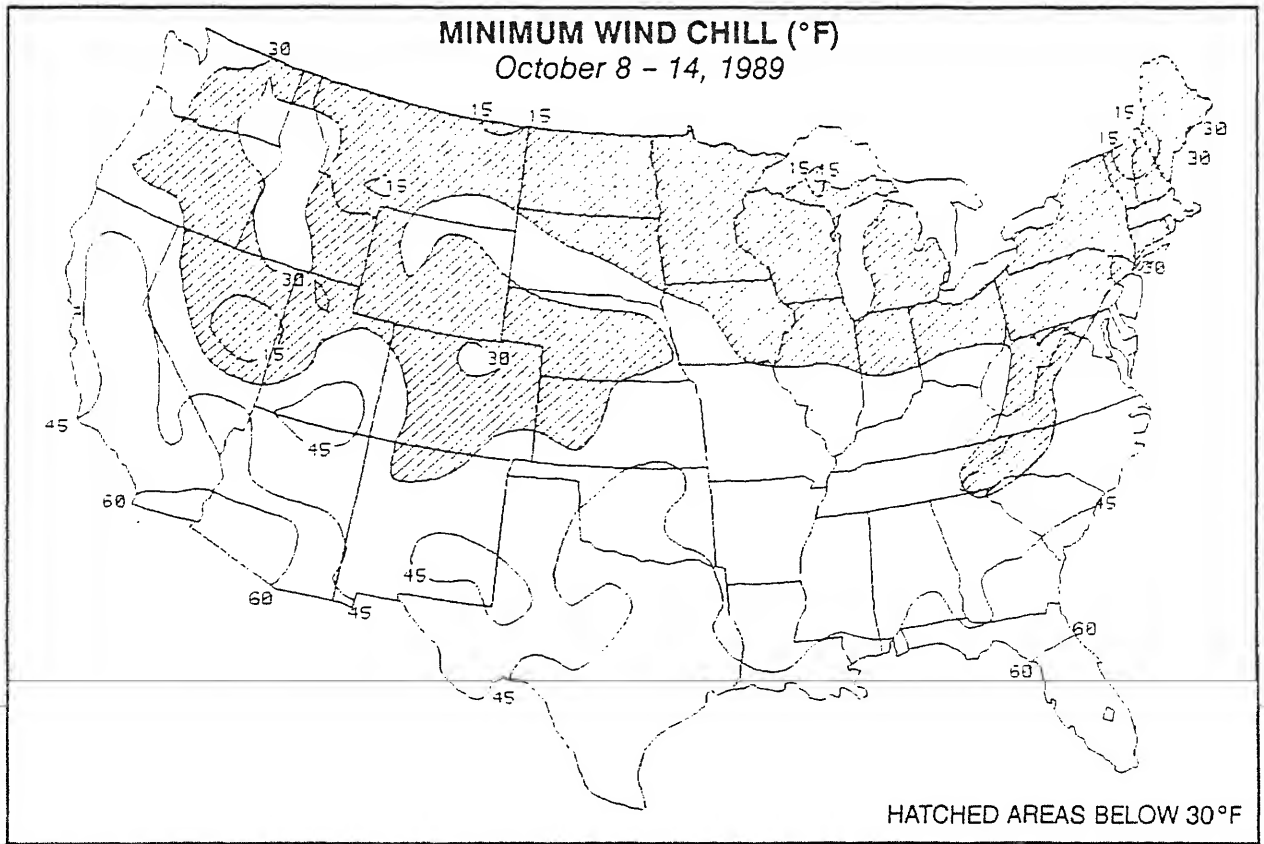
TABLE 3. Selected stations with temperatures averaging 4.0°F or more BELOW normal for the week.

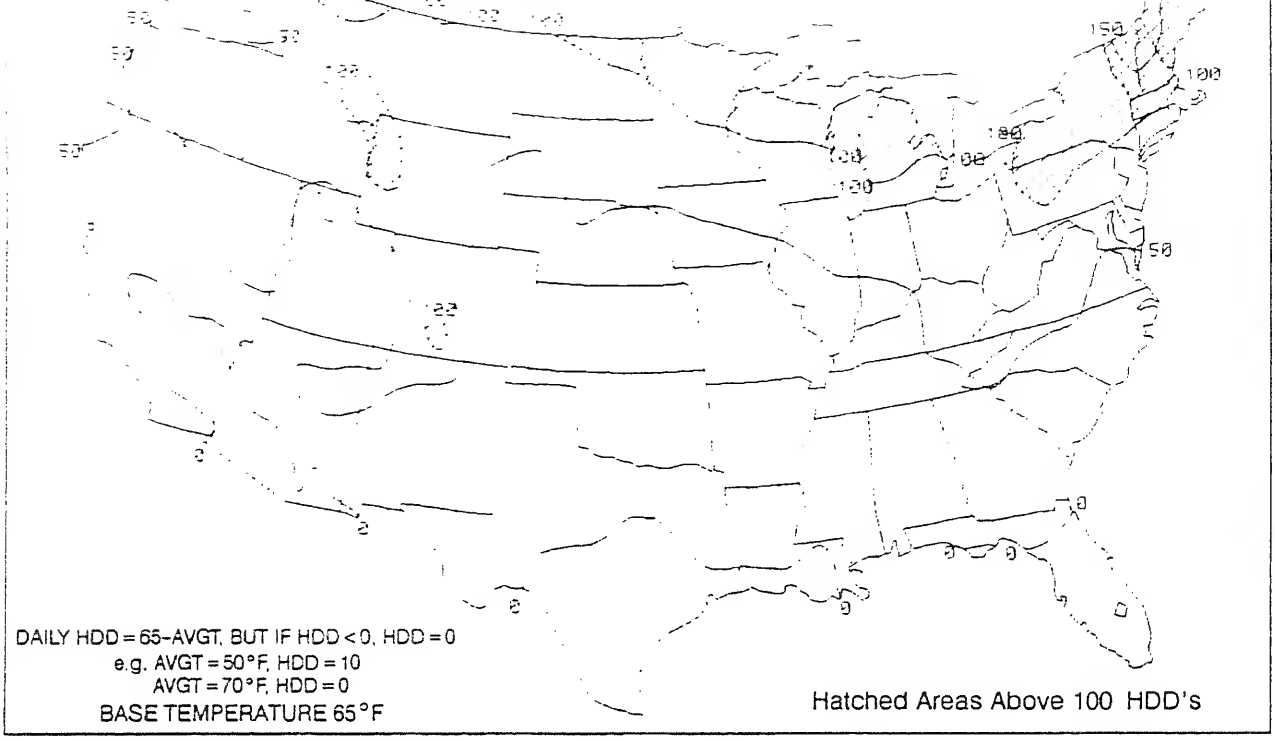
STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
MT. WASHINGTON, NH	-7.2	25.2	NEW BERN, NC	-4.7	60.6
HOULTON, ME	-6.0	39.9	BRIDGEPORT, CT	-4.6	52.9
CORDOVA/MILE 13, AK	-5.6	35.8	MILLVILLE, NJ	-4.5	53.4
ROME/GRIFFISS AFB, NY	-5.5	46.5	AUGUSTA, ME	-4.4	45.9
MASSENA, NY	-5.2	44.3	WORCESTER, MA	-4.4	47.7
UTICA, NY	-5.1	46.2	ROCHESTER, NY	-4.4	49.0
SYRACUSE, NY	-5.1	48.1	DANVILLE, VA	-4.3	58.3
ISLIP, NY	-5.1	51.1	MONTPELIER, VT	-4.1	43.9
ATLANTIC CITY, NJ	-5.1	52.8	BINGHAMTON, NY	-4.1	46.6
CONCORD, NH	-4.9	45.1	ALBANY, NY	-4.1	48.2
GOLDSBORO/SEYMOUR AFB, NC	-4.9	59.3	WILKES-BARRE, PA	-4.1	49.3
GLENS FALLS, NY	-4.8	45.4	HARRISBURG, PA	-4.1	52.8
WRIGHTSTOWN/MCGUIRE AFB, NJ	-4.7	54.0			



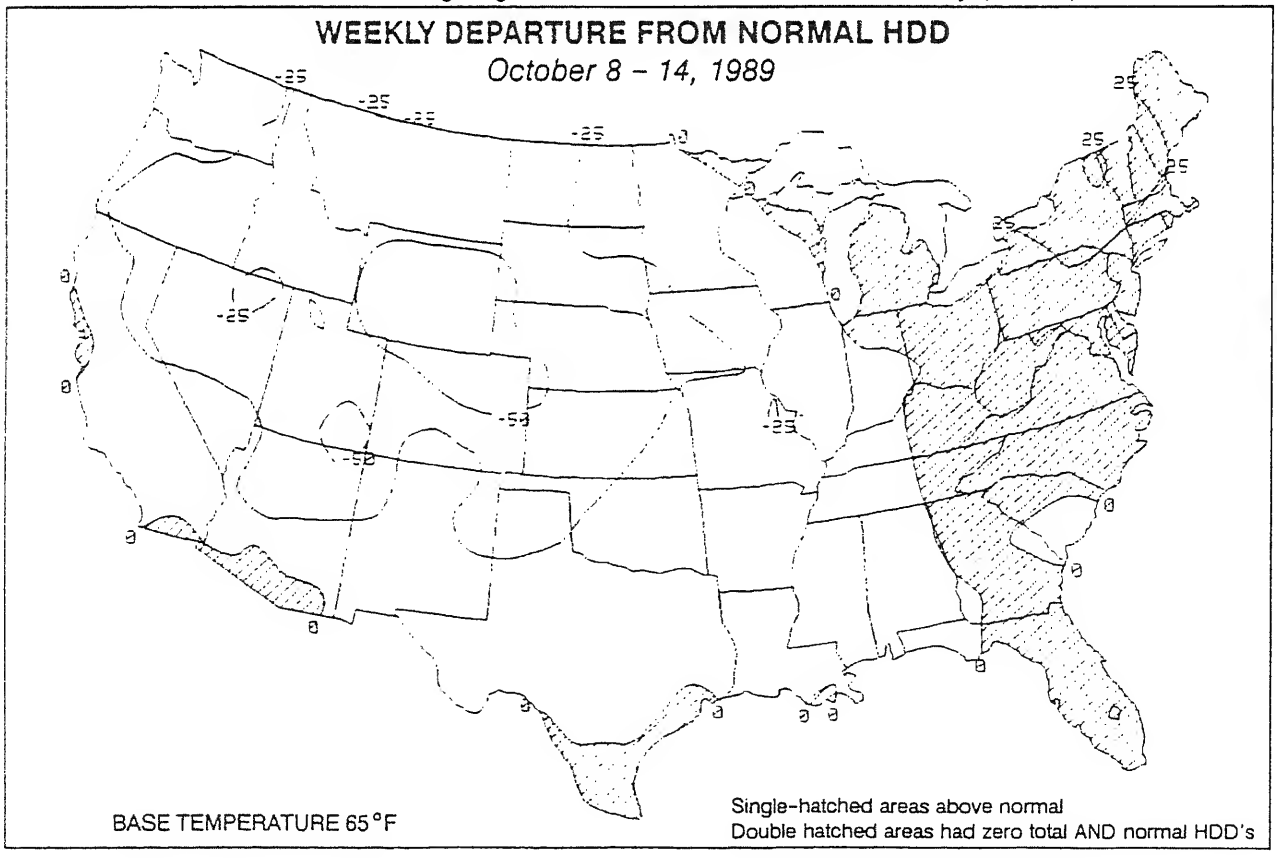


Unseasonably cold air invaded the northeastern quarter of the nation early in the week as temperatures dipped below 32°F in the northern Great Plains, upper Midwest, and New England (top). Gusty winds at a few areas produced wind chills less than 15°F (bottom).



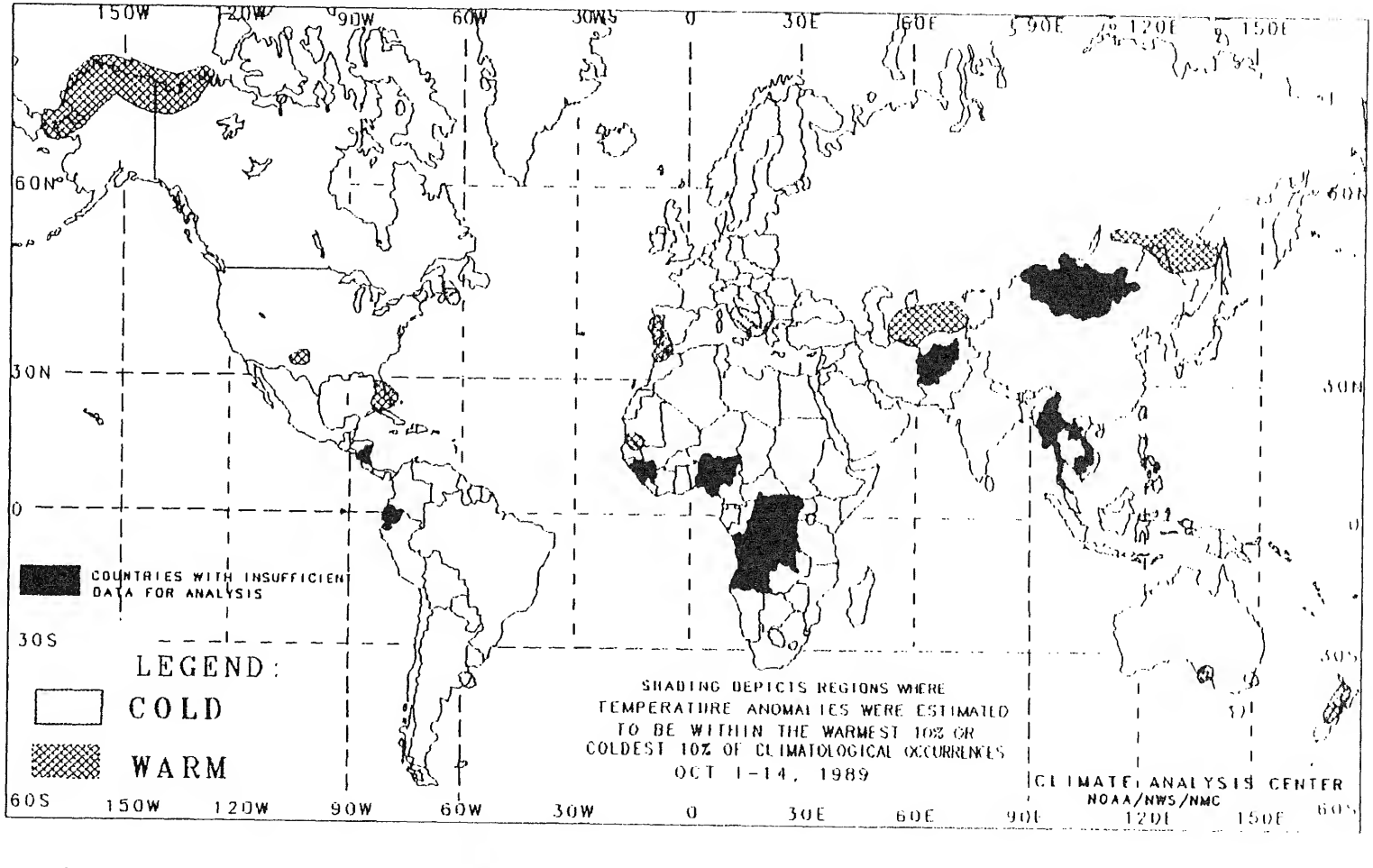


Weekly total HDD's greater than 100 were restricted to New England, the Great Lakes region and the northern Rockies (top). Sub normal temperatures caused elevated heating demand in the eastern quarter of the U.S. while warmer weather reduced normal heating usage in the western two-thirds of the country (bottom).



GLOBAL TEMPERATURE ANOMALIES

2 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

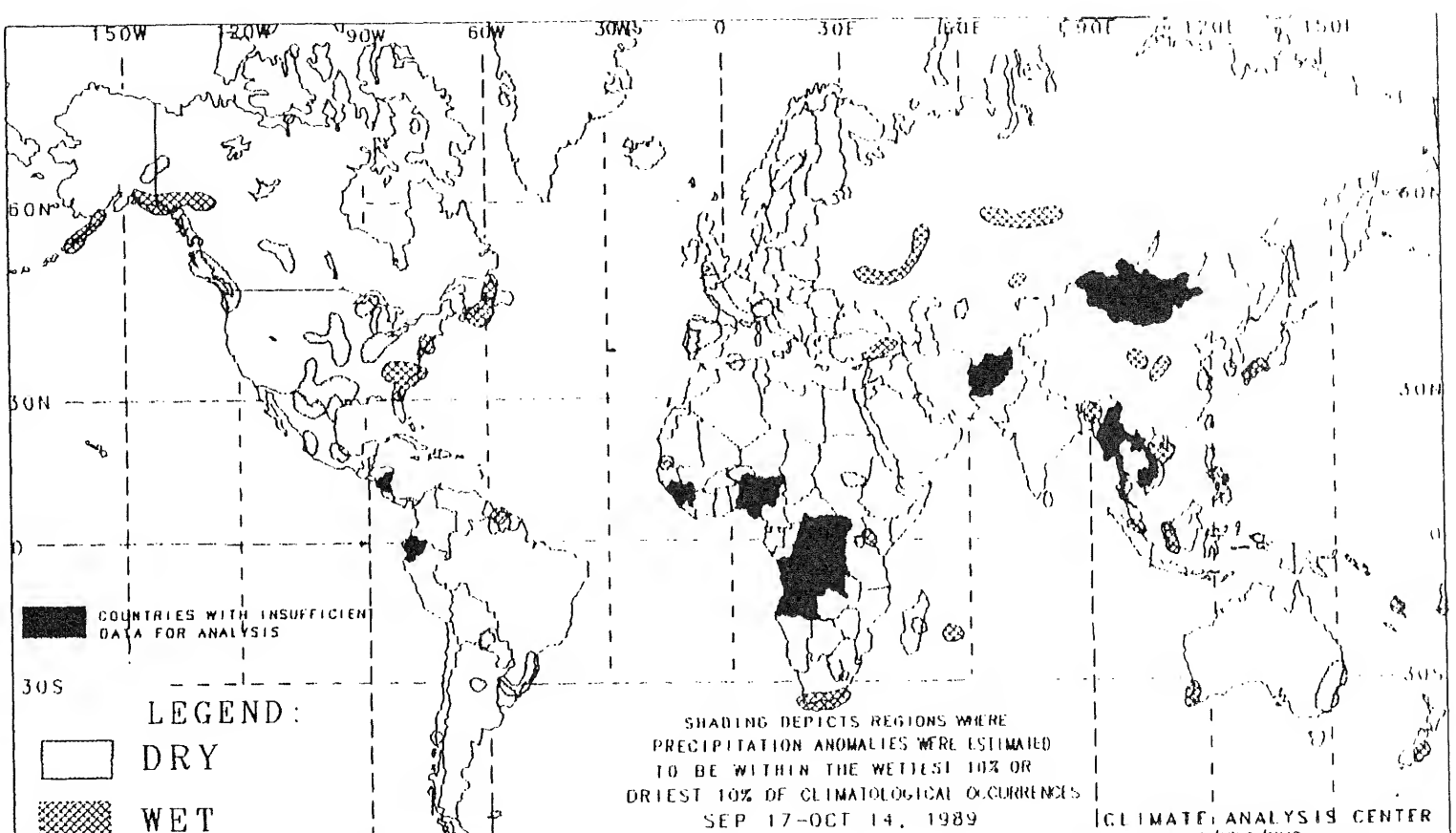
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude anomalies. These regions are located in parts of tropical Africa, southwestern As interior equatorial South America, and along the Arctic Coast. Either current da are too sparse or incomplete for analysis, or historical data are insufficient f determining percentiles, or both. No attempt has been made to estimate t magnitude of anomalies in such regions.

This chart shows general areas of two week temperature anomalies. Cauti must be used in relating it to local conditions, especially in mountainous regions

GLOBAL PRECIPITATION ANOMALIES

4 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

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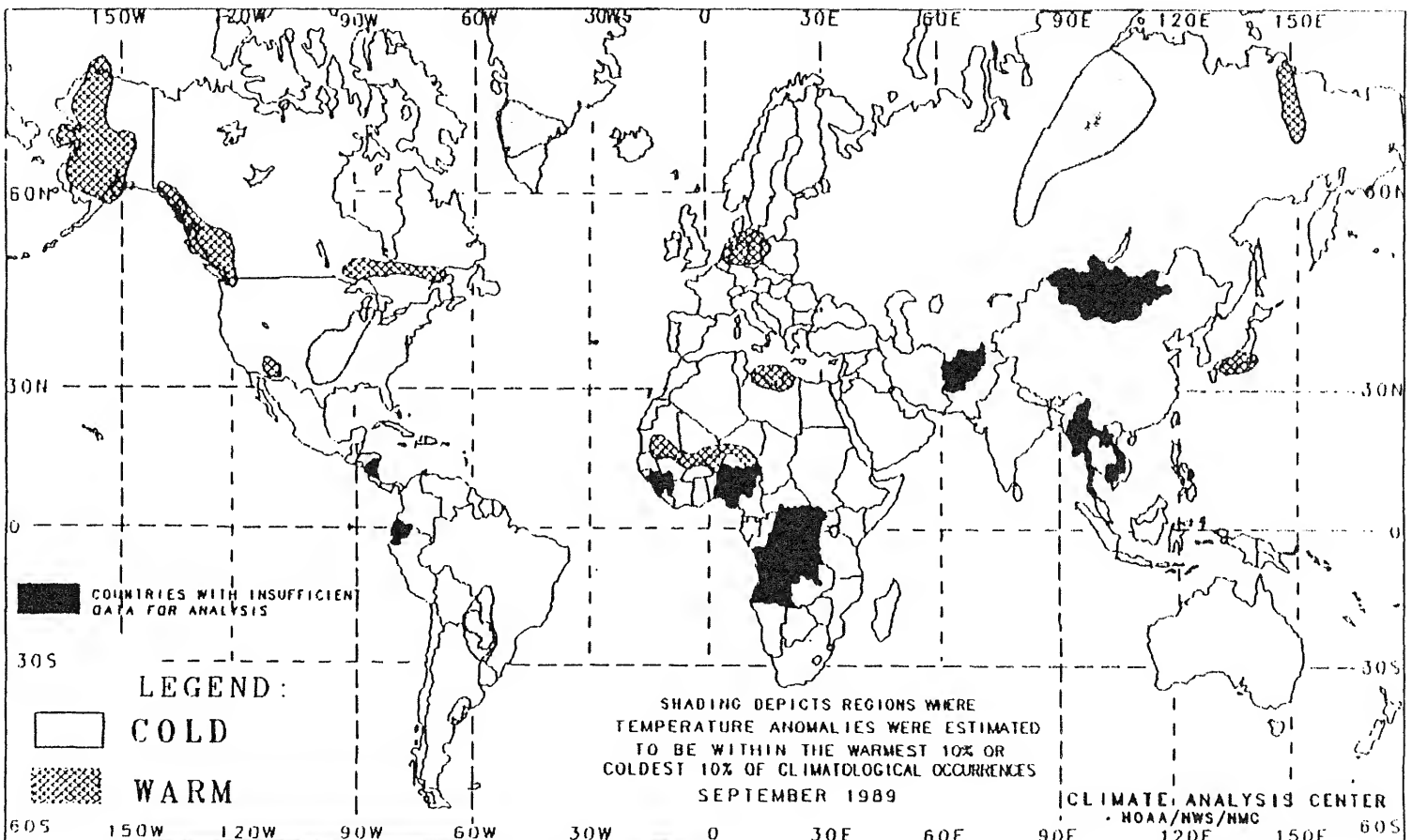
GLOBAL TEMPERATURE ANOMALIES

1 MONTH



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In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of one month temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

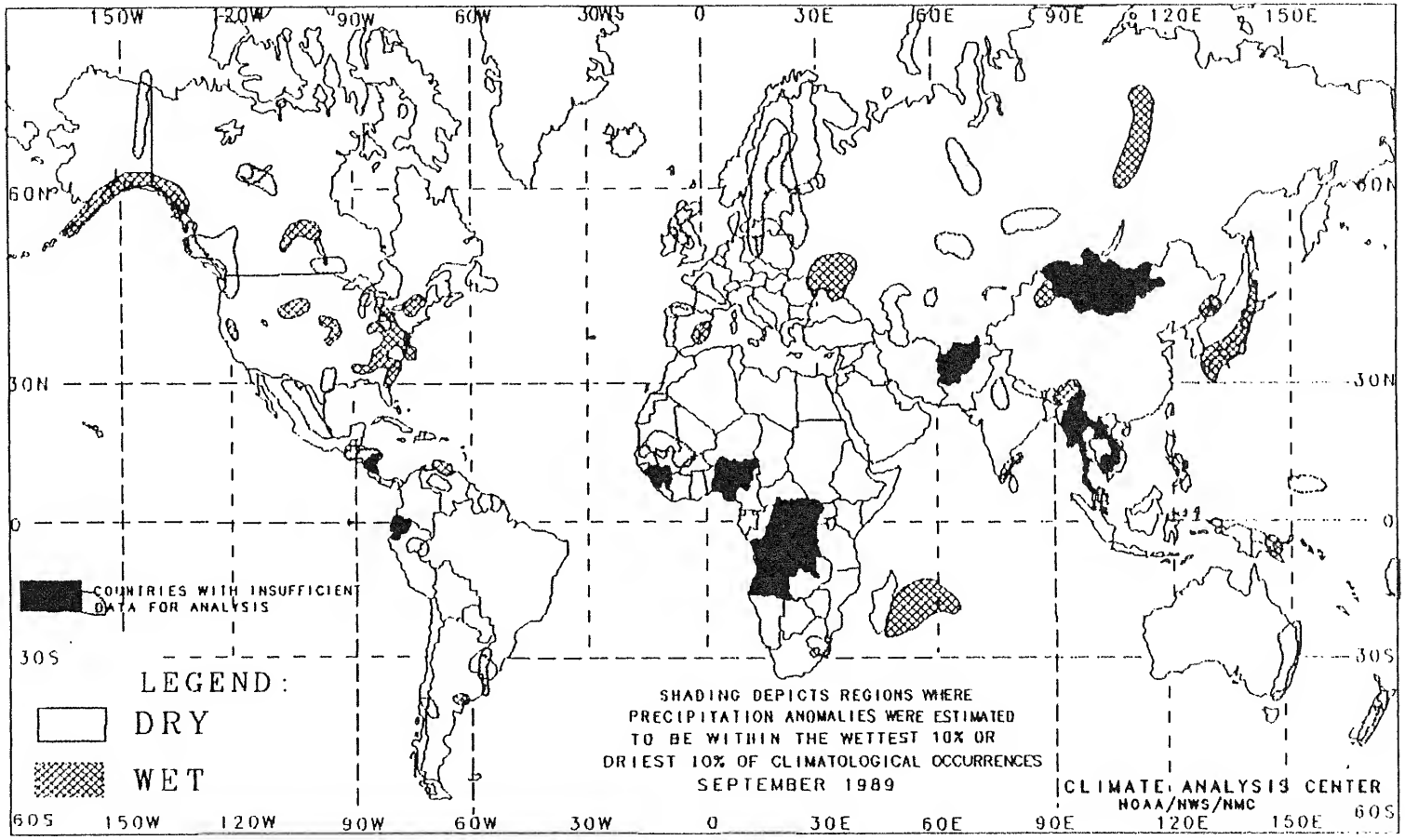
PRINCIPAL TEMPERATURE ANOMALIES

SEPTEMBER 1989

REGIONS AFFECTED	TEMPERATURE AVERAGE (°C)	DEPARTURE FROM NORMAL (°C)	COMMENTS
NORTH AMERICA			
Alaska	+2 to +11	+2 to +3	Very mild early and late September
British Columbia and Southeastern Alaska	+11 to +18	+2 to +3	MILD - 2 to 18 weeks
Southeastern Canada	+12 to +14	+2 to +3	MILD - 2 to 7 weeks
Arizona	+29 to +32	+2 to +3	Very warm early and late September
Central United States	+15 to +24	-2 to -4	COOL - 2 to 6 weeks
SOUTH AMERICA AND EASTERN PACIFIC			
Paraguay, Northern Argentina, and Adjacent Brazil	+16 to +25	-2 to -5	COOL - 2 to 6 weeks
East Central Argentina	Around +10	Around -2	COLD - 2 to 4 weeks
EUROPE AND THE MIDDLE EAST			
Greenland	+1 to +2	-2 to -3	Very cold second half of September
Central Europe	+15 to +17	+2 to +3	Very warm second half of September
AFRICA			
Northern Libya	+27 to +29	+2 to +3	Very warm first half of September
Sahel Region	+30 to +33	Around +2	WARM - 2 to 5 weeks
ASIA			
Central Siberia	-1 to +6	-2 to -3	Very cold second half of September
Eastern Siberia	+6 to +12	Around +2	MILD - 3 to 5 weeks
AUSTRALIA AND WESTERN PACIFIC			
Japan	+21 to +25	+2 to +3	WARM - 2 to 4 weeks

GLOBAL PRECIPITATION ANOMALIES

1 MONTH



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In climatologically arid regions where normal precipitation for the one month period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total one month precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude anomalies. These regions are located in parts of tropical Africa, southwestern A interior equatorial South America, and along the Arctic Coast. Either current d are too sparse or incomplete for analysis, or historical data are insufficient determining percentiles, or both. No attempt has been made to estimate magnitude of anomalies in such regions.

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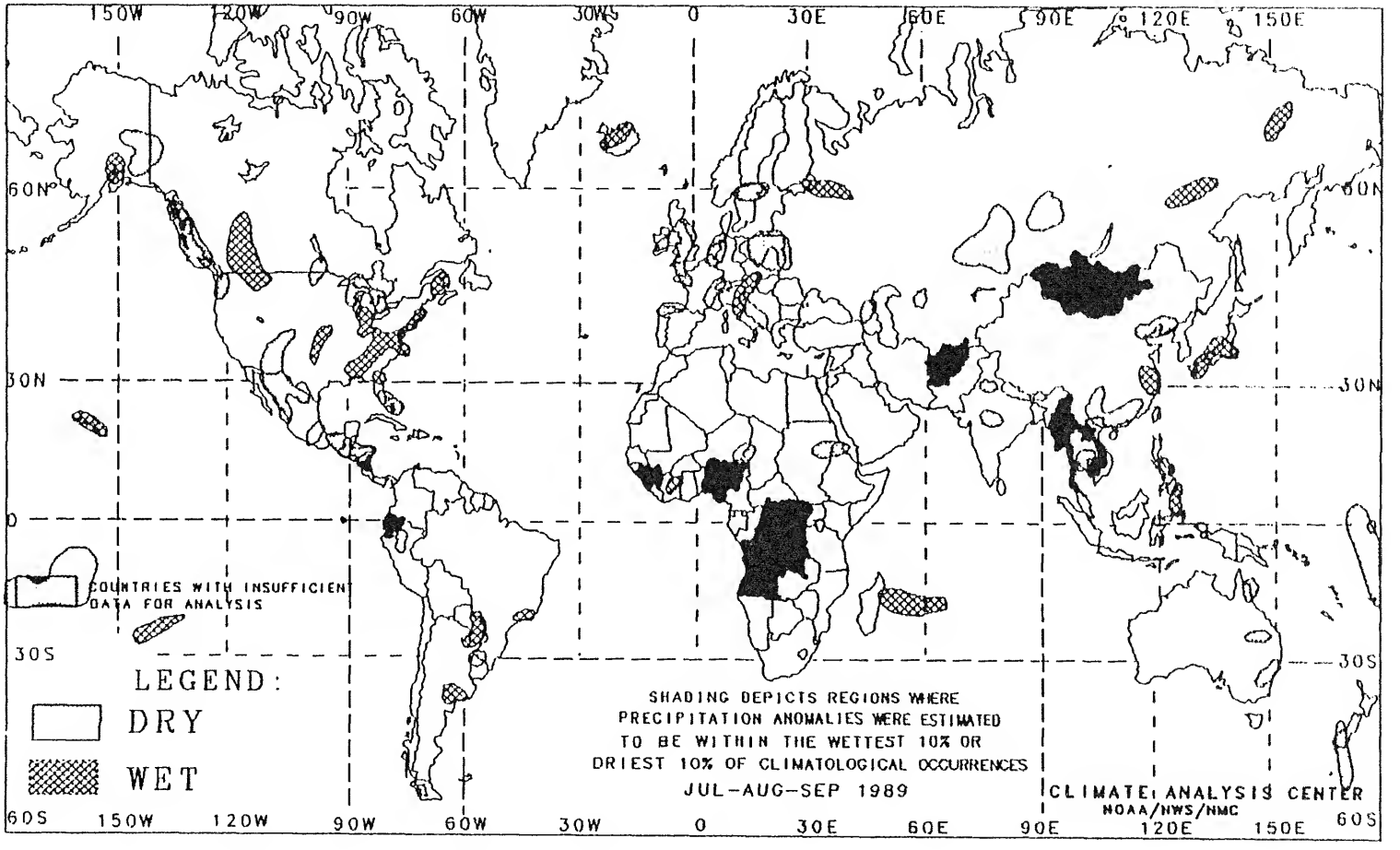
PRINCIPAL PRECIPITATION ANOMALIES

SEPTEMBER 1989

REGIONS AFFECTED	PRECIPITATION TOTAL (MM)	PERCENT OF NORMAL	COMMENTS
NORTH AMERICA			
Eastern Alaska	0 to 16	0 to 31	DRY – 9 to 15 weeks
Southern Alaska	152 to 654	150 to 217	WET – 4 to 6 weeks
British Columbia, Washington, and Oregon	2 to 50	6 to 28	DRY – 4 to 6 weeks
North Central Canada	11 to 23	27 to 56	DRY – 4 to 6 weeks
Saskatchewan and Alberta	6 to 10	8 to 19	Heavy precipitation first half of September
Southern Manitoba and Adjacent Saskatchewan	54 to 98	171 to 214	DRY – 4 to 5 weeks
Southwestern Ontario and Adjacent United States	15 to 60	18 to 65	DRY – 4 to 8 weeks
Northern California	76 to 125	1116 to 1152	Heavy precipitation second half of September
Wyoming and Western South Dakota	56 to 82	259 to 440	WET – 6 to 9 weeks
Eastern Nebraska and Eastern Kansas	165 to 220	216 to 261	Heavy precipitation first half of September
Texas	Around 7	8 to 9	DRY – 4 to 9 weeks
Eastern United States	110 to 508	159 to 370	WET – 4 to 8 weeks
Northern New York State and Northern Vermont	151 to 199	182 to 240	WET – 4 weeks
Mexico	0 to 81	0 to 51	DRY – 5 to 8 weeks
Central America	94 to 137	29 to 51	DRY – 4 to 7 weeks
SOUTH AMERICA AND EASTERN PACIFIC			
Caribbean Islands and Northern Venezulea	106 to 138	211 to 378	Heavy precipitation second half of September
Western Venezuela	54 to 81	32 to 60	DRY – 4 weeks
East Central Peru	28 to 82	32 to 57	DRY – 4 weeks
Central Chile and Adjacent Argentina	2 to 66	10 to 48	DRY – 5 to 8 weeks
Northeastern Argentina and Western Uruguay	6 to 24	8 to 19	DRY – 6 to 8 weeks
East Central Argentina	100 to 130	227 to 469	Heavy precipitation second half of September
Cook Islands	8 to 13	5 to 13	DRY – 4 to 10 weeks
EUROPE AND THE MIDDLE EAST			
Ireland and United Kingdom	12 to 44	15 to 43	DRY – 4 to 5 weeks
Northern Europe	10 to 27	21 to 40	DRY – 5 to 8 weeks
France	3 to 15	4 to 18	DRY – 7 to 13 weeks
Northwestern Spain	6 to 35	9 to 42	DRY – 4 to 10 weeks
Southeastern Spain	9 to 204	235 to 981	Heavy precipitation first half of September
Ukrainian S.S.R. and Adjacent Romania	68 to 168	184 to 368	Heavy precipitation first half of September
AFRICA			
Sahel Region	4 to 99	9 to 55	DRY – 4 to 5 weeks
South Africa	0 to 6	0 to 23	DRY – 4 to 10 weeks
Malagasy Republic and Indian Ocean Islands	47 to 285	184 to 269	WET – 4 to 7 weeks
ASIA			
Northwestern Kazakh S.S.R.	4 to 23	15 to 41	DRY – 8 weeks
Western Siberia	14 to 25	24 to 49	DRY – 5 weeks
Southwestern Siberia	14 to 28	14 to 28	DRY – 2 to 10 weeks
Central Siberia	48 to 73	196 to 212	WET – 4 weeks
Northwestern China	50 to 62	287 to 503	Heavy precipitation second half of September
Northeastern China and Adjacent Soviet Union	118 to 279	207 to 208	Heavy precipitation first half of September
Japan	267 to 661	181 to 352	WET – 4 to 8 weeks
Northeastern India	331 to 457	154 to 213	WET – 5 weeks
Northwestern India	3 to 43	4 to 33	DRY – 5 to 18 weeks
Southern India	73 to 249	210 to 212	WET – 4 weeks
Thailand and Vietnam	66 to 291	23 to 53	DRY – 5 to 8 weeks
Malaysia	340 to 435	183 to 227	WET – 2 to 5 weeks
AUSTRALIA AND WESTERN PACIFIC			
Caroline Islands	150 to 216	45 to 55	DRY – 4 to 5 weeks
Papua New Guinea	301 to 634	147 to 221	Heavy precipitation first half of September
Fiji Islands and Kiribati Islands	28 to 46	9 to 24	DRY – 4 to 10 weeks
Eastern Australia	0 to 46	0 to 45	DRY – 6 to 10 week
New Zealand	10 to 82	13 to 39	DRY – 5 to 10 weeks

GLOBAL PRECIPITATION ANOMALIES

3 MONTH

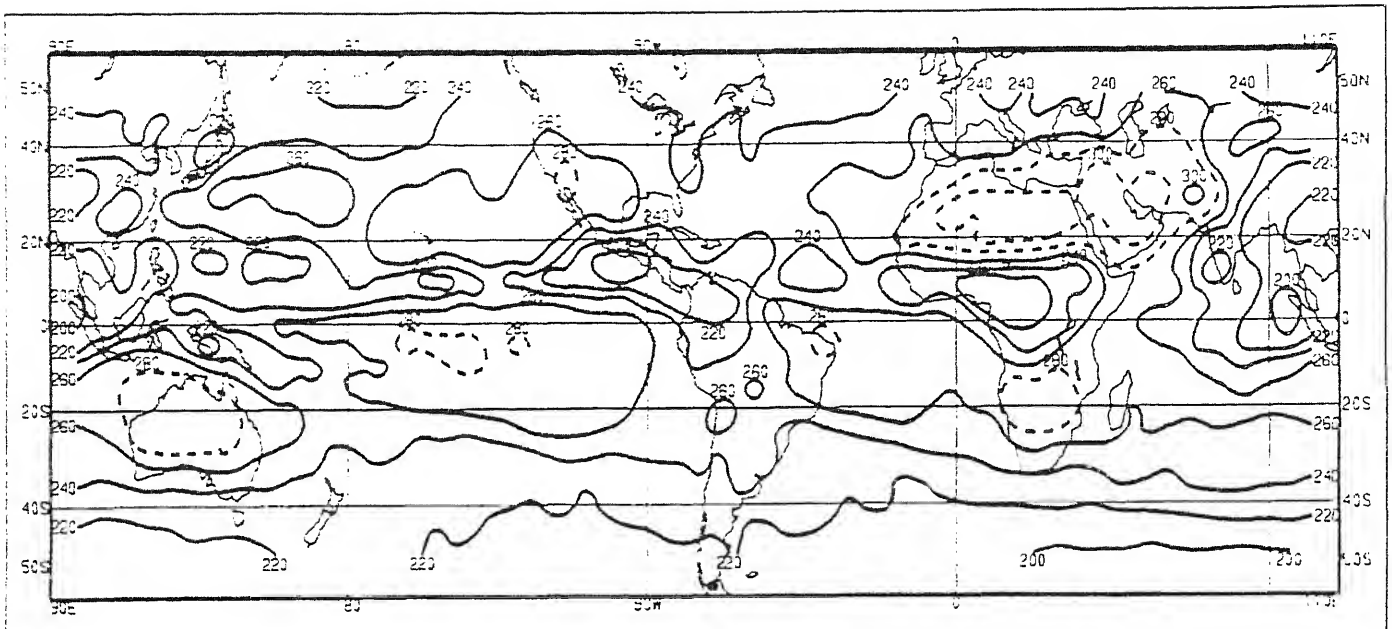


The anomalies on this chart are based on approximately 2500 observing stations hich at least 81 days of precipitation observations (including zero amounts) were ved or estimated from synoptic reports. As a result of both missing observations he use of estimates from synoptic reports (which are conservative), a dry bias e total precipitation amount may exist for some stations used in this analysis. in turn may have resulted in an overestimation of the extent of some dry alies

In climatologically arid regions where normal precipitation for the three month d is less than 50 mm, dry anomalies are not depicted. Additionally, wet alies for such arid regions are not depicted unless the total three month pitation exceeds 125 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of three month precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

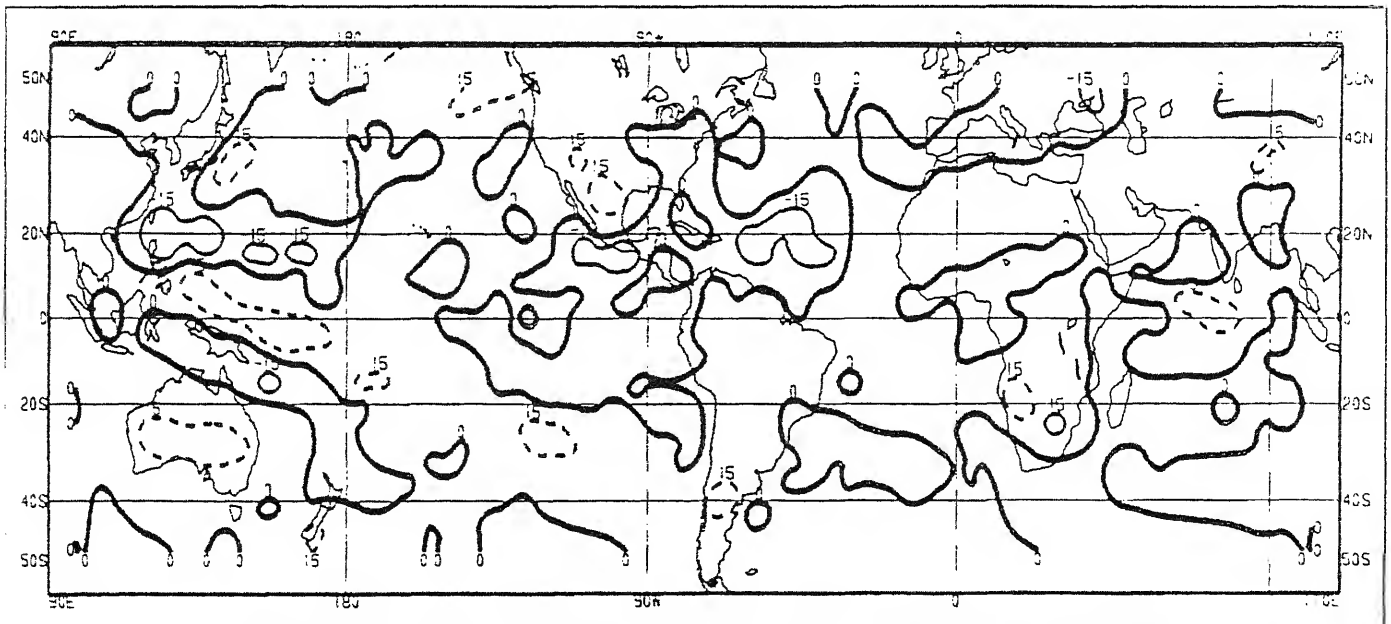


Monthly Mean Outgoing Long Wave Radiation (OLR) for September 1989

EXPLANATION

The mean monthly outgoing long wave radiation (OLR) as measured by the NOAA-9 AVHRR IR window channel by NESDIS/SRL (top). Data are accumulated and averaged over 2.5° areas to a 5° Mercator grid for display. Contour intervals are 20 Wm^{-2}, and contours of 280 Wm^{-2} and above are dashed. In tropical areas (for our purposes 20°N – 20°S) that receive primarily convective rainfall, a mean OLR value of less than 200 Wm^{-2} is associated with significant monthly precipitation, whereas a value greater than 260 Wm^{-2} normally indicates little or no precipitation. Care must be used in interpreting this chart at higher latitudes, where much of the precipitation is non-convective, or in some tropical coastal or island locations, where precipitation is primarily orographically induced. The approximate relationship between mean OLR and precipitation amount does not necessarily hold in such locations.

The mean monthly outgoing long wave radiation anomalies (bottom) are computed as departures from the 1979 – 1988 base period mean. Contour intervals are 15 Wm^{-2}, while positive anomalies (greater than normal OLR, suggesting less than normal cloud cover and/or precipitation) are dashed and negative anomalies (less than normal OLR, suggesting greater than normal cloud cover and/or precipitation) are solid.



Monthly Mean Outgoing Long Wave Radiation (OLR) Anomaly for September 1989